

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) IMPROVEMENTS IN CEILINGS

(71) We, BARRACUDAVERKEN AB, a Swedish Body Corporate, of Skarsnasvagen 4, Djursholm, Sweden, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

In claim 1 of the specification of our Patent No. 1,129,635 a false ceiling is claimed, comprising a surrounding frame which is secured to the structure of the room, and a sheet of plastics foil which is held stretched in position within the frame by the engagement of a border of the sheet with the frame, wherein the frame has a longitudinal channel facing into the room and the lower wall of which is formed with a shoulder facing the base of the channel, and the border is made of a resilient plastics material having a U-shaped cross-section with an upper thinner one of the flanges of the U fixed to the edge of the sheet and a lower thicker one of the flanges of the U extending back beneath the sheet; the arrangement being such that the border is held in the channel in the frame by the engagement of the free edge of the thicker flange behind the shoulder and by the tension in the sheet which causes the border to tilt in the channel to provide a wedging action as the base of the U bears against the upper wall of the channel.

Hitherto, the frame has been made of wood and the channel for receiving the border of the foil has been cut out by means of a cutter. The walls of such channels are rigid and can withstand relatively great wedging forces upon tilting of the thicker flange of the border in the channel. However, if the frame is an extrusion of plastics material the walls of the channel will have a relatively small and even thickness in order to enable the frame to be easily made at a relatively small consumption of plastics material. The walls of the channel may then bend elastically away from each other if the wedging action of the thicker flange of the border is too great.

Although the border will still be locked in

the channel when its walls are slightly spread apart, it is desired to avoid this because it may result in an uncontrolled permanent deformation of the frame.

In accordance with the present invention, the false ceiling claimed in claim 1 of specification No. 1,129,635 has a border of U-shaped cross-section in use, of which the thicker flange of the U-shaped cross-section border tapers towards a waist portion adjacent to the base of the U, and the base has a substantially triangular cross-section and tapers away from the flanges.

The provision of the waist portion prevents the flanges of the border from tending to spring apart with any appreciable force, and the triangular cross-section of the base of the U causes the border to engage the upper wall of the channel along a line which is spaced well back from the free edge of the thicker flange of the border. Both these effects reduce the tendency of the wedging action to spread the walls of the channel apart.

An example of a ceiling constructed in accordance with the invention is illustrated in the accompanying drawing in which:

Figure 1 is a vertical cross-section of the frame secured to a wall with a border of plastics foil in position in a channel of the frame but still in its unstressed condition; and

Figure 2 is a similar cross-section but showing the border in its stressed and locked condition.

The frame consists of a plastics material and has a cross-section comprising three legs 10, 11 and 12 which meet at a common edge of the frame. The leg 10 is secured to the existing wall 13 of a room, by means of nails 14 for example. A wooden batten 15 indicated by dotted lines is mounted on the plastics leg 10 to reinforce the same and facilitate nailing.

The leg 10 is at right angles to the leg 11, whereas the leg 12 forms acute angles with the leg 11 and is directed obliquely downwards. At the lower edge of the leg there is an abutment or shoulder 16.

In the example shown the leg 12 is formed

with an end portion 17 which is directed obliquely upwardly to form a cornice portion and has a free edge 18 which space below the free edge 19 of the leg 11 to form a mouth opening 20 to the channel formed between the legs 11 and 12.

The false ceiling proper consists of a sheet of PVC or other plastics foil 22 and has a border 21 welded to the edges of the foil as indicated by dotted lines in Figure 1. The border 21 is inserted into the channel of the frame as shown in solid lines in Figure 1 in which the foil 22 is still in its unstressed condition.

The border 21 is U-shaped in cross-section and has a thinner, upper flange 23 of substantially equal thickness along its width. The flange 23 is slightly curved in its unstressed condition to present a convex surface facing the leg 11 as shown in Figure 1. The flange 23 is secured to the foil 22 along a weld 24.

The other leg of the border is a thicker flange or blocking bar portion 25 which is several times as thick as the flange 23. The flange 25 tapers towards a waist portion 26 which is about as thick as the flange 23 and which forms a connecting portion between the flange 25. An edge portion 27 which is common to both flanges 23 and 25 is of substantially triangular cross-section, and its surfaces are formed as continuous extensions of the outside surfaces of the flanges 23 and 25.

When the foil 22 is stressed the border takes a locking position in the channel of the frame as shown in Figure 2. The thicker flange 25 remains against the shoulder 16 substantially in the same position as shown in Figure 1, whereas the edge portion 27 is elastically bent upwardly to contact the leg 11 of the frame and prevent further wedging. The bending occurs at the waist portion 26 so that the portion displaced by the bending, that is the edge portion 27, will be relatively

short. In this position the border is effectively blocked in the channel formed between the legs 11 and 12, and the border acts on the shoulder 16 with a force which is only slightly oblique relative to the leg 12 so that the bending force on this leg will be relatively small. The bending of the leg 12 is thus very small and the mouth opening 20 and the height between the shoulder 16 and the leg 11 is kept substantially constant.

If the border 21 is to be disengaged from the shoulder 16, the leg 12 can be bent downwards by means of any appropriate tool to the position indicated by dotted lines in Figure 1.

The thinner flange 23 has a greater width than the thicker flange 25 of the border in order to leave sufficient free space for carrying out the weld at 24.

WHAT WE CLAIM IS:—

1. A false ceiling according to claim 1 of specification No. 1,129,635, in which the thicker flange of the U-shaped cross-section border tapers towards a waist portion adjacent to the base of the U, and the base has a substantially triangular cross-section and tapers away from the flanges.

2. A false ceiling according to claim 1, in which the thickness of the waist portion is substantially the same as the thickness of the thinner flange of the U.

3. A false ceiling according to claim 1 or claim 2, in which the thinner one of the flanges of the U is curved in its unstressed condition to present a convex surface to the upper wall of the channel of the frame.

4. A false ceiling according to claim 1, substantially as described with reference to the accompanying drawing.

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COMPLETE SPECIFICATION

*This drawing is a reproduction of
the Original on a reduced scale*

